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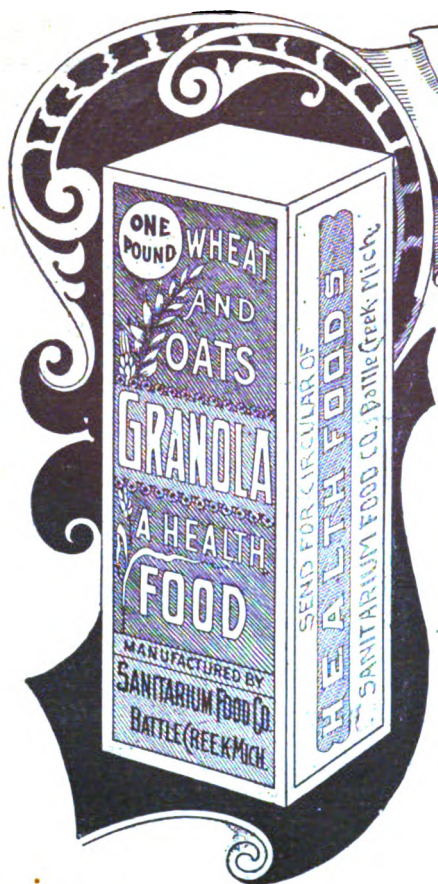
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*Bulletin of the American
Medical Temperance Association*

American Medical Temperance Association



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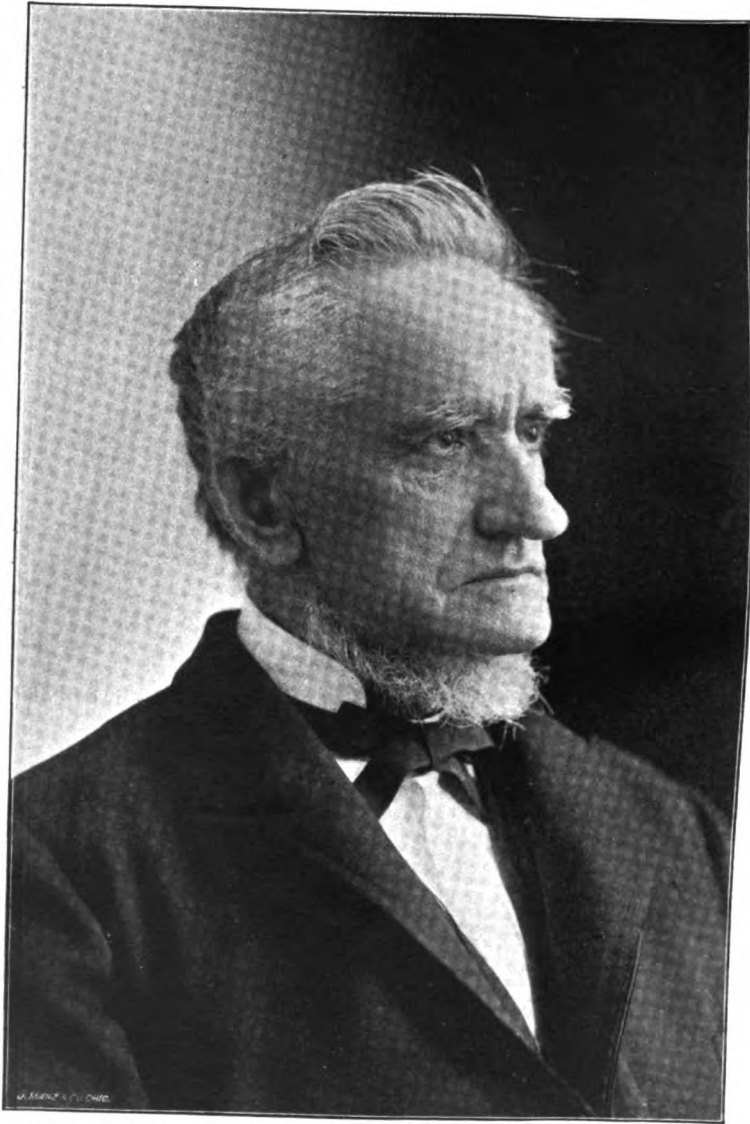
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No. 1.

GENERAL ARTICLES.

CLINICAL FACTS AND CASES ILLUSTRATING THE EFFECTS OF ALCOHOLIC LIQUORS IN THE TREATMENT OF TYPHOID FEVER, PNEUMONIA, DIPHTHERIA, AND SOME OTHER AFFECTIONS.

BY N. S. DAVIS, M. D., LL. D.

Annual Address of the President of the American Medical
Temperance Association, Delivered June 8, 1893.

At our last annual meeting I directed your attention to the radical differences in origin, properties, and physiological effects of the carbo-hydrates resulting from vegetable and animal growth, and those resulting from bacteriological or retrograde action. The first, consisting chiefly of starch, sugar, gum, dextrin, and fat or oils, when taken into the digestive organs, were readily digested, assimilated, and converted into the elements of blood and tissue; while the latter, consisting of the different varieties of alcohol, were capable of neither digestion nor assimilation, but displayed all the properties of toxic ptomaines when introduced into the living system. In the discussion that followed, a desire was manifested for clinical facts derived from the actual use of alcohol in the treatment of the more important forms of disease.

To contribute something toward gratifying that desire has induced me to present, on this occasion, a brief statement of the chief objects for the accomplishment of which alcoholic liquors are at the present time administered in the treatment of disease or morbid conditions of the human system; and to illustrate the same by cases occurring under my own observation.

Those who prescribe alcohol in the treatment of their patients, do so on the supposition that, in suitable doses, it is capable of retarding metabolic or tissue

changes, of producing a general stimulating or supporting effect, and of acting as a direct cardiac tonic. Hence they prescribe it in moderate doses, chiefly in connection with milk or other liquid nourishment, in most of their cases of protracted wasting forms of disease, as tuberculosis, chronic diarrhœa, etc., and in all those acute febrile affections in which death is liable to result from either general asthenia or failure of the heart, as in typhoid fever, pneumonia, and diphtheria. In my previous address, and in several other papers, it was shown that all the direct and carefully devised experiments by the most scientific investigators of different countries, coincided in sustaining the proposition that alcohol, when taken into the living body, neither acted as a general stimulant nor a cardiac tonic, nor as a true conservator of normal tissues, but decidedly the reverse in each of these particulars. It is my purpose at this time to adduce such clinical facts and cases as strongly corroborate the results of direct experiment. For though I have not prescribed any variety of alcoholic liquor for internal use in the treatment of diseases during the preceding forty years, I have had many opportunities for observing its effects as prescribed by others in a great variety of diseases.

The first case of typhoid fever in which the influence of alcohol was specially studied by me, occurred forty years since and was recorded as follows:—

Case I—Mr. A—, a young man in a boarding house on Michigan Ave. near So. Water St., had been confined to his bed a little more than two weeks with all the symptoms of typhoid fever of average severity as described by his attending physician, with whom I had been called in consultation. The patient was lying on his back; face pale or leaden hue; lips retracted with sordes on the exposed part of the teeth; tongue covered with a thick though moist coat, but red and dry on the tip and edges; skin generally moist

and on the extremities cool and purplish color, but warmer than natural over the chest and abdomen (clinical thermometers were not then in use), the latter moderately tympanitic and gurgling on pressure; his pulse was 110, very soft and weak; respirations 22, shallow, expiration short with sudden fall of the abdominal muscles, copious sub-mucous rales over the anterior and lateral parts of the chest, with decided dullness posteriorly; the urine was scanty; the intestinal evacuations were a thin grayish-yellow, voided from three to six times in the twenty-four hours, and only partially controlled by the patient; hearing dull and mind inactive. The symptoms that had alarmed both the friends and the attending physician, were the rapidly increasing engorgement of the lungs, feebleness of the pulse, and impairment of the sphincters of the rectum and bladder. The patient had been fed principally with meat broths and a little wine during the first week, but during the last preceding five or six days, he had taken a liberal supply of egg-nog and milk-punch containing whisky, and as his respiration and circulation continued to lessen in efficiency, the whisky had been increased, during the last twenty-four hours, to nearly half an ounce every hour. Having then recently seen the statement by Dr. Prout, that the presence of alcohol in the blood diminished the consumption of oxygen and the elimination of carbonic acid, and the aspect of the patient strongly indicating a decided deficiency in the oxygenation and decarbonization of his blood, I ventured to suggest to the attending physician the propriety of omitting the further use of the whisky or other alcoholic remedies.

He replied with some earnestness that the "stimulants," as he termed the wine and whisky, had been the efficient means of keeping the patient alive for several days past, and that their withdrawal now would be followed by certain and speedy fatal prostration. On my expressing a desire to see the experiment tried, he unexpectedly withdrew from further attendance, and left the case with all its responsibilities in my hands. I ordered that the patient be fed regularly every hour with two or three tablespoonfuls of wheat flour and milk gruel or thin porridge, alternating every third dose with an equal quantity of beef-tea seasoned with chlorate of potassa instead of common salt; and for

medicine, I directed sulphate of quinine 0.13 grams (gr. ii) every four hours, with eight minims each of oil of turpentine and tincture of opium in the form of an emulsion between the doses of quinine; and immediately stopped the further use of all alcoholic liquids. As this was the first time I had come so directly in contact with the question whether alcohol is a supporting or non-supporting agent in the advanced stage of typhoid fever, and being forty years younger than at present, I watched the case during the next forty-eight hours with an uncomfortable degree of anxiety, lest the predicted sinking and collapse might come. But at the end of twelve hours, there was slight improvement both in the depth of the inspirations and strength of the pulse; and at the end of forty-eight hours not only the circulation and respirations were much better, but the turpentine and laudanum emulsion had much lessened the frequency and improved the quality of the intestinal evacuations. The treatment was continued, and in eight days, being in the first half of the fourth week of the fever, convalescence fairly commenced, and the patient made a good recovery.

Case II.—Mr. B—, a young man, had passed through a severe course of typhoid fever, and after partial recovery suffered a relapse with the typhoid and enteric symptoms severe. On the eighth day after his relapse I was called in consultation with his attending physician. Found the patient emaciated with all the typhoid symptoms strongly marked; temperature varying from 39° to 40° C. (102.5° to 104° F.); pulse 110, soft and weak; respirations shallow and 20 per minute; physical signs of considerable hypostatic engorgement of the posterior part of the lungs and enlargement of the spleen; urine scanty and slightly albuminous; and the intestinal evacuations from three to six in the twenty-four hours, and near the color and consistency of cream.

The patient since the relapse had been diligently fed on milk, beef-tea, and eggs, with which he took half an ounce of brandy every two hours, or six ounces per day. He had been also taking quinine 0.13 grams (gr. 2), every four hours, and an emulsion of oil of turpentine and tinct. Opii between. As the previous consulting physician was not able to be present, I suggested no changes in his treatment

except to add the use of strychnine and nitric acid in moderate doses to sustain the vaso-motor and respiratory nerve functions.

Four days later, when again called in consultation, I found the patient in a state of extreme depression. The whole cutaneous surface was wet with a cool, clammy sweat, color leaden or cyanotic; pulse very weak, and respirations variable with no expansion of the right side of the chest, and diminished resonance over the whole right side and the posterior part of the left. Auscultation revealed sharp sub-mucous rhonchi in the anterior and lateral part of the left lung, and a short, weak systolic action of the heart. The patient was reported to have had two thin intestinal evacuations during the preceding night, had passed but little urine, and had none in the bladder now, but had several spells of profuse sweating with great feebleness, on account of which the nurse had given an extra amount of brandy. Being fully satisfied that the alcohol in the form of brandy by its anæsthetic effect was progressively paralyzing both respiratory and cardiac nerve structures, and by its action on the hemoglobin of the blood was equally inhibiting the internal respiration and thereby threatening an actual suspension of all metabolic changes, I advised its entire withdrawal at once. The attending physician was so impressed with the fear of immediate fatal collapse if that should be done, that I compromised by an agreement to have the brandy reduced one half; the strychnine increased and given every three hours, and fifteen minims of an equal mixture of the tinctures of digitalis and belladonna half way between the doses of strychnine. He was to be fed on one ounce of wheaten flour and milk gruel every hour, and a tablespoonful of warm coffee between. All these directions were faithfully executed, and the following morning we found a notable improvement in the respiration and circulation, with less sweating and more secretion of urine. The brandy was again reduced one half, and the next day discontinued entirely; otherwise the same treatment was continued. For two subsequent days the respiration, circulation, and general metabolic processes improved slowly, but subsequently more rapidly, and in five days convalescence was established. But such was his extreme exhaustion that it

required two or three months to regain a fair degree of flesh and strength.

I have given the two foregoing cases with sufficient detail to show that they were not only severe cases of typhoid fever in the middle stage of their progress, but that they actually presented that depressed condition of the respiratory, cardiac, and circulatory functions, pointed out by all writers and teachers who regard alcohol as a cardiac tonic or stimulant, as urgently demanding its use, and when the attending physicians verily thought the life of the patients depended upon its continued liberal administration, and yet its entire withdrawal was followed by the most gratifying results. I could relate a dozen cases equally strongly marked in all their features, in which the alcoholic remedies were at once wholly discontinued, with the same happy results; but time will not permit.

The two cases following will illustrate the effects of actually continuing to give the alcohol to the end.

Case III.—Mrs. C—, aged about 35 years, mother of a family residing on North State street, to whom I was called in consultation with the attending physician early in the morning on account of unexpected symptoms of extreme feebleness. The physician stated that she had been confined to her bed three weeks with typhoid fever of moderate severity; that she had progressed favorably, and three days since began to show signs of approaching convalescence; *i. e.*, her bowels had ceased to be loose, abdomen less tympanitic, tongue more moist, and temperature only one or two degrees above natural. But yesterday he had found her countenance pale, hands and feet cool, pulse very soft and weak, and respirations both slow and inefficient. At present all these symptoms of failure of both respiration and circulation were so much increased that speedy death was feared. Yet no wasting discharges had occurred. The bowels had moved but once during the last thirty-six hours, the evacuation being nearly natural; the urine was nearly natural in appearance and quantity; skin moist but no excessive perspiration; mind dull or taking little note of anything, but not delirious.

In answer to my question as to what medicines and nourishment had been given to the patient, the physician stated that he had controlled her temperature by

two doses of acetanilide each day and two grains of quinine every four hours during the whole course of the fever, and for nourishment, meat broth and milk. Yesterday, on seeing the indications of exhaustion, he had omitted the acetanilide and given frequent doses of carbonate of ammonia, continuing the nourishment more actively; but no mention was made of having used any alcoholic liquors. I advised him to continue the liberal use of milk with some coffee, and to give in addition to the small doses of quinine, strychnine, and digitalis as cardiac and vaso-motor tonics, with the hope of improving the respiration and circulation.

The following morning I was called again hastily, the messenger stating that the patient appeared to be dying. I found the patient pulseless, lips and extremities cold and blue, and she soon ceased to breathe. The attending physician not being present, I asked the nurse whether anything had been given the patient mixed with her nourishment. She said she had given a *tablespoonful* of brandy with the milk or beef-tea once in three or four hours during the whole course of the fever, and since the signs of failure occurred it had been given once in two hours, and during the last night, finding her extremities more cold, she had given it every half hour.

The patient with a fair typical case of typhoid fever, had thus taken for three weeks from three to four ounces of brandy and two antipyretic doses of acetanilide per day, both having such an affinity for the hemoglobin of the blood as greatly to retard the internal distribution of oxygen. Consequently, when just entering upon convalescence from the fever, the respiratory nerve center and the cardiac ganglia began to fail in maintaining efficient respiration and circulation. The antipyretic was discontinued, but under the popular illusion that alcohol is a cardiac tonic, the quantity of brandy was doubled first, then trebled, and finally quadrupled, ending in total inhibition of the internal distribution of oxygen, and so-called *heart failure*.

Case IV.—Mr. D—, age between 30 and 35 years, a lawyer, and for several years a moderate drinker of alcoholic liquors, had been sick with typhoid fever full three weeks, when I was called in consultation by his attending physician, on account of the supervention of undue

feebleness of pulse, inefficient inspiratory movements, with increasing moist râles in the chest, and a mild grade of delirium. The enteric symptoms that had been active during the second and first part of the third weeks, had ceased; his tongue had become moist and clean, and his temperature between 99° F. and 101° F.; and his physician thought him commencing convalescence, until the cardiac and respiratory failure supervened. He had been treated very much the same as Case III, repressing temperature by moderate doses of antipyrin, and on account of his habit of using alcoholic liquors he had been given wine and some whisky with milk and eggs throughout the whole course of his disease. I advised the use of efficient doses of digitalis and strychnine to sustain the sensibility of the cardiac, vaso-motor, and respiratory nerve centers, with a moderate dose of pulv. Doveri and camphor to encourage sleep at night, the entire omission of wine and whisky, and the continuance of a liberal supply of milk and some coffee. The advice was adopted and carried out except in regard to the alcoholic liquors. The dread of fatal prostration caused the wine to be continued moderately. The next day there was a moderate improvement in all his symptoms, and it was understood that during the next twenty-four hours even the wine should be entirely withdrawn. But before that time had elapsed, an experienced physician of good reputation and a relative of the sick man came, and taking charge of the case, returned to the liberal administration of whisky or brandy punch, and in about forty-eight hours death ensued from pulmonary oedema and cardiac paralysis.

In regard to the use of alcohol in pneumonia, I could cite a considerable number of cases in which, being called at the most critical stage of the disease, and finding the pulse frequent and weak, the respiration shallow, with coarse, moist rhonchi in the chest, and urine scanty under the liberal use of whisky or brandy punch, I have persuaded the attending physician to wholly abandon all alcoholic remedies, and give instead, digitalis and liquor ammonia acetatis, alternated with one or two grain doses of calomel until the latter moved the bowels and aided in more efficiently eliminating the toxic elements of the urine, and then continuing the digitalis, alternating with small doses

of quinine and strychnine, with a dose of pulv. Doveri and camphor in the evening, and with uniform favorable results. On the contrary, I have sometimes been overruled, and the use of the alcohol has been persisted in to the end, and with results which the following cases will show:—

Case V.—Mr. E—, an active business man, aged about 40 years, was attacked with all the ordinary symptoms and physical signs of croupous pneumonia, limited to the lower lobe of one lung, three days before I was called in consultation with the attending physician. Found the patient with flushed face, skin hot; pulse 100 and fair volume; respirations short, 25 per minute, and accompanied by some pain in the side, aggravated by coughing; expectoration bloody but not copious; urine scanty, redder than natural, and yielding traces of albumen.

His physician had given sufficient calomel and laxative medicine to move the bowels freely during the first day of the sickness, and then put the patient upon moderate doses of quinine and half ounce doses of whisky, in liberal quantities of milk, every two hours.

Regarding the alcohol in the whisky as directly increasing the inhibition of the internal distribution of oxygen, and in consequence the further retention of the toxic elements of urine, I advised its entire omission and in its place the giving of suitable doses of digitalis and liquor ammonia acetatis. Instead of accepting my advice, a third physician was called into the council, who agreed with the attending physician, and the whisky was continued and the quantity moderately increased. All the symptoms, however, continued to increase, and twenty-four hours later the whole face and neck were deeply suffused with redness; the mind dull and mildly delirious; pulse 115 per minute and weak; respirations more frequent but less depth, and accompanied by more mucous rhonchi with increased dullness over the lower and posterior part of the right side of the chest; and urine still scanty. Much fear was now expressed lest the cardiac force should fail before the crisis of the disease had passed, and adhering still to the idea that the alcohol was the most reliable cardiac tonic, it was crowded still more actively with liberal quantities of milk. Fortunately at this critical period the patient's stomach rebelled, and began to reject promptly the

whisky punch and everything else by vomiting, and for the next twelve or eighteen hours hardly a teaspoonful of any nutrient was retained in the stomach. In the meantime the deep redness of the face disappeared, the pulse became slower, respiration deeper, and the mind free from delirium, and a little later a free discharge of urine. By giving only tablespoonful doses of lime water and milk, alternately with similar doses of beef-tea, the stomach became quiet, and the next day all the symptoms were so much improved as to show that the crisis had passed, and with little else than good nursing, the patient recovered.

Whether the result would have been as fortunate if the patient's stomach had continued to retain all the whisky being administered, or whether it would have so fully inhibited the oxidation and decarbonization of the blood, and paralyzed the cardiac and respiratory functions as to prove speedily fatal, may admit of doubt in the minds of some.

Another case illustrating the same point was that of a traveling salesman, aged about 25 years, to whom I was called by Dr. H—, his attending physician, who stated that three days previously his patient had been attacked with a chill followed by all the symptoms and physical signs of croupous pneumonia. He had first moved his bowels, and since had been giving him five grains of quinine three or four times a day, and a tablespoonful of whisky every two or three hours with milk, eggs, and meat broths. At the time of my visit his whole assemblage of symptoms were identical with those of the preceding case, an hour before his vomiting commenced.

I advised smaller doses of quinine, the entire omission of all alcoholic liquors, and in their stead fair doses of hydrochlorate of ammonia and digitalis in syrup of liquorice, every three hours, and a blister to the affected side of the chest. He yielded a strict adherence to my advice, and the next day we found the patient less deeply flushed, respiration slower and deeper, temperature one degree lower, urine more free, and mind more tranquil. The same treatment was continued and in two days more he had passed the crisis and entered upon a successful convalescence. In this case the voluntary and complete withdrawal of the much-used whisky punch and egg-

nog at the end of the third day of the pneumonia was as markedly beneficial as was its forcible rejection by the patient's stomach in Case V.

On the other hand, another case to which I was called only a few weeks since in consultation with two other physicians, was less fortunate. The patient was a robust man, about 40 years of age, an habitual user of intoxicating liquors, and during the last two or three years subject to attacks of bronchitis during the colder parts of the year. After suffering two or three weeks from his usual bronchitis, decided pneumonia had developed in the central and lower parts of the right lung, three or four days before I was called to see him. Being a dealer in liquors, the patient had insisted on having his full daily supply of whisky in spite of the advice of either physicians or friends. At the time of my visit, his face was of a leaden hue, extremities cool and moist, respirations shallow, with coarse, moist rhonchi and very little expansion of the right side of the chest and very dull on percussion. Pulse soft, weak, and frequent, urine scanty, and mind dull. I advised a liberal administration of digitalis, strychnine, and an expectorant mixture containing hydro-chlorate of ammonia, camph. tincture opii, and syrup of Senega, and an entire exclusion of the use of alcoholic liquor. But I was told that it was useless to attempt such exclusion; because without it the patient could not be kept in the bed or house, except by force. Its use was consequently continued, and a few days later the patient died. To illustrate the effects of both the use and the non-use of alcohol in the treatment of diphtheria, I shall have time to detail but one case.

Case VI.—Mr. W—, an educated man, about 23 years of age, to whom I was called on the evening of Dec. 21, 1892, had been attacked with severe diphtheria two weeks previously, and had been under the care of two physicians. Present condition: expression dull, face suffused with dull redness and slightly swollen, no swelling of the glands of the neck but much difficulty of deglutition, muscles of the right side of the face paralyzed, hearing dull, with constant noises in the head, temperature 103° F., respirations 40 per minute, pulse 120 and weak, skin dry, right side of the tongue swollen, making talking difficult, abdomen moder-

ately tympanitic; seven intestinal evacuations during the preceding twenty-four hours, thin, reddish brown, containing mucus and undigested milk; urine nearly natural in quantity but containing considerable albumen; slight moist sounds in right side of chest, cardiac impulse weak; considerable purulent discharge from the right ear and from a cellular abscess in the left thigh. A trained nurse who had been with the patient from the beginning, says the attack commenced with a chill, followed by continued fever and sore throat, the latter covered with diphtheritic exudation extending into the posterior nares. Was treated from the beginning with quinine, liberal doses of whisky and milk internally, and locally with sulphur powder blown into the throat and nostrils. It was while his physician was blowing the sulphur powder into his throat at the end of the first week, that the patient felt a sudden shock that stopped the hearing in the right ear and made him think the powder had entered into the Eustachian tube. Paralysis of that side of the face was noticed the next day, and three days later purulent discharge commenced from the right ear, and an abscess had matured in the left thigh. As the pulse was becoming more rapid and weaker, strophanthus and strychnine were given in addition to the quinine and whisky, and both the throat and ear were cleansed with disinfectants. The daily records of the nurse during the second week of the sickness show the pulse to have ranged from 100 to 110 A. M. and from 120 to 130 P. M.; temperature from 101° to 102° A. M. and 103° to 105° P. M., with what are designated as "sinking spells," especially during the latter part of the night. According to the same record the patient has taken half an ounce of whisky in from three to six ounces of milk every hour, day and night, during the whole sickness, and more whisky when the "sinking spells" came on. I ordered the whisky and all other alcoholic liquors removed from the room, and no more to be given to the patient under any circumstances. Instead of the previous treatment, I directed the following prescription:—

R Acid Carbolic.....	0.50	c. c.
Glycerine.....	20.00	c. c.
Comp. Tinct. Iodine.....	15.00	c. c.
Tinct. Digitalis.....	25.00	c. c.
Camph. Tinct. Opil.....	60.00	c. c.
Elixir Simplicis.....	40.00	c. c.

Mix, give 4.00 c. c., or one teaspoonful,

every four hours and also eight minims each of oil of turpentine and tincture of opium in the form of an emulsion, half way between; for nourishment, two ounces of wheat flour and milk gruel, and four ounces of plain milk alternately two hours apart; a sponge bath whenever the temperature rose above 103° F.; and nothing but a tablespoonful of coffee every ten minutes for "sinking spells," while the "sinking" continues.

Dec. 22, 9 A. M. Patient had slept some, bowels had moved but once, urine free, abdomen less tympanitic, pulse 106 and weak, respirations 30, temperature 101° F., but skin dry. Ordered the carbolic acid and iodine solution to be given every three hours, and the emulsion only once in six hours; all other items to be continued as before.

Dec. 23, 9 A. M. During the afternoon of the preceding day the pulse became irregular and increased to 120 per minute, and temperature rose above 104° F. for two or three hours. The dreaded "sinking spells" occurred but twice and then quickly passed, with only a few spoonfuls of coffee. This morning his skin is moist, he is resting well, pulse 76, still weak, temperature 100° F., no tympanites and no evacuation of the bowels. Ordered the carbolic acid and iodine solution continued and strychnine $\frac{1}{10}$ of a gr. every three hours, but omitted the emulsion until after the bowels had moved.

A place in the central part of the right half of the tongue is more swollen and a deep blush of redness over the upper part of his face. Both the discharge from the right ear and the abscess on the thigh carefully dressed antiseptically every day.

Dec. 24, 9 A. M. Patient resting in a state of complete apyrexia, pulse 70, still weak, temperature 99.3° F., fever was less than previous afternoon, bowels moved once, and feces natural. But an abscess is maturing in the right half of the tongue, making talking and swallowing more difficult, and a distinct blush of erysipelas occupies the bridge of the nose and upper part of the cheeks. Continued the solution containing iodine, and gave tincture of chloride of iron for the erysipelas.

Dec. 25, 9 A. M. No febrile paroxysm during the preceding twenty-four hours, pulse 75, temperature 99° F., erysipelas has moved up over the forehead and into the scalp. Opened the abscess in the

tongue and discharged a teaspoonful of pus. Gave hyposulphite of soda instead of the tincture of iron, otherwise continued treatment.

Dec. 26, 9 A. M. Rested well during the night, pulse and temperature nearly natural during all the past twenty-four hours. Tongue less swollen and deglutition easier, progress of erysipelas checked, and bowels and urine nearly natural, but the purulent discharge from right ear with loss of hearing and paralysis of that side of the face continues. Same treatment and diet continued.

Dec. 28. Patient has progressed favorably; erysipelas disappeared; no albumen in his urine; convalescence fairly established with a good appetite but very weak. A small cellular abscess was discovered and opened on his right thigh. Instead of hyposulphite of soda, gave an equal mixture of compound tincture of cinchona and compound syrup of hypophosphites as a tonic.

Jan. 1. Has continued to improve in all respects slowly.

Jan. 5. Still improving, although another abscess had matured and was opened to-day, over the biceps of the left arm, where a hypodermic injection of strychnine had been given during the second week of his sickness.

Jan. 11. Patient is sitting up and dressed, and has since fully recovered health, except the total loss of hearing in the right ear and paralysis of the muscles of that side of the face, which continues.

I have given this case of diphtheria in detail from my note book, at the risk of being tedious, because a more perfect clinical experiment for testing both the effects of the liberal use of alcohol and its non-use could not well be devised. A young man previously in good health, during the first two weeks of a fair attack of diphtheria, takes from twelve to sixteen ounces of whisky per day, and at the end of that time has well-marked enteric typhoid symptoms, suppuration in the middle ear and one thigh, and so much feebleness of circulation as to have been twice thought to be dying; then the whisky is suddenly and entirely omitted, and instead of fatal collapse he soon begins to improve, and in one week is convalescent.

Could there be any more direct or stronger clinical proof that the alcohol acted neither as a stimulant, a cardiac

tonic, nor a conservator of tissue; but as "nerve paralyzer," an inhibitor of oxygenation and decarbonization of the blood, and a promoter of tissue degeneration and suppuration?

HISTORICAL SKETCH OF THE AMERICAN MEDICAL TEMPERANCE ASSOCIATION.

BY T. D. CROTHERS, M. D.

THE journal of the American Medical Association for April 11, 1891, contained the following letter:—

To the Editor:—

Several months since, the undersigned received a communication from the Secretary of the British Medical Temperance Association, suggesting the formation of a similar organization in this country and the establishment of fraternal relations between them. The British Medical Temperance Association was organized in 1876, in London, with thirty members, and Dr. Edmunds as president. It now embraces about five hundred members, with Dr. B. W. Richardson as president, and Dr. J. J. Ridge as secretary.

Among its numbers are many eminent members of the profession in that country, and it has exerted a wide and most beneficial influence.

The objects of the Association are declared to be, "To advance the practice of total abstinence in and through the medical profession; to promote investigation as to the action of alcohol in health and disease; and to constitute a band of union among medical abstainers scattered all over the country.

"It admits as members, registrable medical practitioners who are practical abstainers from all alcoholic liquors as beverages. It admits as associates, medical students who also practice total abstinence. Neither members nor associates are required to sign any pledge, but if such, for any reason, cease to be total abstainers, it is expected that notice of withdrawal from the Association will forthwith be sent to the secretary."

The liberty of members in prescribing alcohol as a medicine is uncontrolled.

The formation and active maintenance of such an association in this country would accomplish an amount of good not easily estimated; and if those members of the profession who would favor such a step, will send me their address on postal cards, I will provide a time and place for meeting in Washington during the week of the next annual meeting of the American Medical Association in that city.

N. S. DAVIS, M. D.,

65 Randolph St., Chicago, Ill.

This letter created an unusual interest, and was followed by a large correspondence.

During the session of the American Medical Association, at Washington, the month following, Dr. Davis called a meeting at the Grand Army Hall, of all persons interested, at 9 A. M., May 7,

1891. Over fifty persons were present, including a large number of ladies connected with local temperance societies. Dr. Davis was made chairman, and a committee appointed to draft a plan of organization, of which Dr. Davis was chairman.

The meeting adjourned to next morning, May 8, at the same place. Dr. Davis reported a draft of the Constitution and By-Laws, which was unanimously adopted. Fifty-six persons signed the Constitution as charter members. The following officers were elected:—

President.—N. S. Davis, M. D., Chicago, Ill.

Vice-Pres.—I. N. Quimby, M. D., Jersey City, N. J.; J. B. Whiting, M. D., Janesville, Wis.; F. E. Yoakum, M. D., Shreveport, La.; J. Taft, M. D., Cincinnati, Ohio.

Secretary.—T. D. Crothers, M. D., Hartford, Conn.

Treasurer.—G. W. Webster, M. D., Chicago, Ill.

After various speeches full of enthusiasm and promise, the society adjourned.

For several years the idea of an association of physicians to advance the temperance cause had been urged; and stirring efforts have been made to secure the indorsement of medical men in various reform movements. The extreme views and strong partisan theories urged by the leaders of these efforts, failed to attract physicians. Several societies were formed among the irregulars of the profession, whose principal work was the reiteration of theories of doubtful accuracy. To Dr. Davis is due the credit of making this association possible. For many years he has constantly urged the need of medical study of alcohol, and pointed out the popular fallacies prevalent in the practice of medicine concerning its use. These views have attracted increased attention, and been confirmed by thoughtful physicians in all parts of the country. It has finally become evident that the question of alcohol in medicine must be studied by physicians from a purely scientific point of view, above all present theories. The time has come when this work can be done in a special society of medical men with no other purpose except to discover the facts, irrespective of all conclusions.

The first meeting of this society was not only largely attended, but its work

was warmly welcomed by the medical press and the profession generally.

The only criticism offered, was that the clause requiring members to be total abstainers was radicalism. The answer to this was that only total abstainers could clearly and impartially study this problem. The literature of the subject presents many examples of dangerous and faulty theories, honestly defended by moderate drinkers, who are unable constitutionally to reason logically in this field.

The second meeting of this Association, held in Detroit, showed a steady growth in the profession and interest; and to have some authoritative data from which to base future studies, Dr. J. H. Kellogg, of Battle Creek, offered two prizes of a hundred dollars each for the best essays on the physiological action of alcohol and the non-alcoholic treatment of disease. The large number of competing essays for these prizes is an unmistakable indication of the interest of the profession in this direction. Although at the last meeting it was thought advisable to withhold the decision and continue the offer of the prizes for another year, it is evident that a large number of medical men have begun the study of alcohol from its scientific side.

Thus the American Medical Temperance Association has entered the field for the scientific study of alcohol and its allied problems. Its organization and methods of work will undoubtedly change more or less as the subject becomes better known; but all thoughtful observers will agree that this is one of the great, new, outlying provinces that will be fully occupied in the coming century.

This Association comes before the profession for the first time in a novel organ, not with any idea of suddenly revolutionizing medical sentiment concerning alcohol, or to propagate any special theories, but to urge a new and broader study of this topic, and if possible to educate the profession concerning the facts that are verified by physiological investigation, enabling them to teach the public the true scientific facts concerning alcohol.

The magnitude of this subject, and its complex relations to practical life, and the profound ignorance and errors associated with it, seem to demand a new study from a higher point of view. This our Association promises to do.

BIOGRAPHICAL SKETCH OF N. S. DAVIS, A. M., M. D., LL. D.

THE subject of this sketch, Prof. Nathan Smith Davis, A. M., M. D., LL. D., of Chicago, Ill. (frontispiece), was born Jan. 9, 1817, in Chenango County, New York, in a primitive log house in the forest. He was the youngest of seven children. He was left motherless at the age of seven years, but his father lived to the advanced age of more than ninety years. Until the age of sixteen, he labored with his father and brothers upon the home farm, and by the active out-door life which he then pursued, doubtless laid the foundation for the remarkably healthy and vigorous physical organization which has served him so well through an active and unusually busy and useful career.

Having at a very early age evinced unusual aptness in the acquisition of knowledge, which his friends were not slow to discover, his father secured for him the best educational advantages afforded at that time, and at the early age of seventeen years he began the study of medicine, and graduated with honor from the College of Physicians and Surgeons of the Western District of New York, Jan. 31, 1837, a few days after his twentieth birthday. He entered at once into active practice, first at Vienna, New York, then at Binghamton, and in 1847, ten years after his graduation, in New York City, where he remained for two years, when in August, 1849, he removed to Chicago, where he has since resided. Dr. Davis has all his life been interested in scientific studies, and especially in original scientific investigation, not only keeping himself thoroughly abreast of the newest results of scientific research, particularly in those subjects which relate to medicine and collateral sciences, but has himself been a frequent contributor to the various departments of medical science, of new and important facts and observations.

Dr. Davis has always been a profound student of physiology, and at the very beginning of his professional career, adopted what the eminent Dr. Jacob Bigelow, of Boston, and his compeer, the wise and witty Dr. Oliver Wendell Holmes, happily denominated "rational medicine," in contradistinction from the "artificial method," which was almost

universally in vogue at the time when Dr. Davis entered upon the practice of his profession. The thoroughness with which he entered upon the study of physiology as the basis for his professional work, is well shown by the fact that he chose for the subject of his graduating thesis, "Animal Temperature," maintaining against the authority of the great Liebig, the then heretical idea that the heat of the body is not formed in the lungs by the union of oxygen and carbon, but is evolved through the metabolic processes occurring in the various tissues of the body. The importance of this thesis so impressed the faculty of the College of Physicians and Surgeons that it was read in public on commencement day as a part of the day's exercises.

Soon after leaving college, Dr. Davis began an exhaustive study of all that was at that time known concerning the physiology of the nervous system, and in 1841 received the prize offered for the best "Analysis of the Discoveries Concerning the Physiology of the Nervous System," offered by the Medical Society of the State of New York. A few years later (1848), a prize was awarded to him by the State Agricultural Society of New York for "A Text-Book on Agricultural Chemistry."

In 1854 Dr. Davis published one of the most remarkable of all the numerous works which have come from his prolific pen, entitled, "A Lecture on the Effects of Alcoholic Drinks on the Human System, and the Duty of Medical Men in Relation Thereto." This lecture was delivered in Rush Medical College on Christmas, 1854. An appendix to the work contained a full account of a series of original experiments in relation to the effect of alcohol upon respiration and animal heat, by which the author showed for the first time that alcohol, when administered to a warm-blooded animal diminishes instead of increasing the temperature.

Experiments undertaken a few years later by Richardson and others of England, fully confirmed the accuracy of these remarkable studies, and the correctness of the results obtained. These experiments unquestionably laid the foundation for the scientific study of the physiological effects of alcohol upon the human body; and their significance in relation to the scientific study of in-

temperance cannot be easily overstated. They were the first experiments which showed conclusively that the effect of alcohol was not a stimulant, but the opposite. The results obtained, so forcibly impressed Dr. Davis that he abandoned the use of alcohol as a stimulant, and, as he himself has elsewhere stated in this journal, during the last forty years he has discarded alcohol as a therapeutic agent, both in hospital and private practice, and with such results as lead him to favor the total exclusion of this drug from the list of therapeutic agents. Dr. Davis is also the author of a compendious work on medical practice, and of numerous monographs on various medical subjects.

Dr. Davis has always been active in whatever pertained to the welfare of the medical profession, the promotion of its interests, and especially in the elevation of the standard of medical education. It was the following resolution, presented by him to the New York State Medical Society, and adopted by that body, which led to the organization of the American Medical Association:—

"Whereas, It is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States; and,—

"Whereas, There is no mode of accomplishing so desirable an object without concert of action on the part of the medical societies, colleges, and institutions of all the States; therefore,—

"Resolved, That the New York State Medical Society earnestly recommends a national convention of delegates from medical societies and colleges in the whole Union, to convene in the City of New York, on the first Tuesday in May, in the year 1846, for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble."

The activity of Dr. Davis in the creation of the American Medical Association, the prominent part which he has, from the very beginning of the organization, taken in all its proceedings, and the important aids which he has given to its growth and development, well entitle him to the paternal respect with which he is regarded by the many thousands of physicians who compose this greatest of medical organizations the world has ever seen, and which finds expression in the term, "Father of the American Medical Association," a title very frequently applied to him. Dr. Davis is nearly always present at the annual meetings of the Association, having been absent only four times during the half century since it was organized. His relations to the Associa-

tion are thus well expressed by Dr. J. M. Toner, of Washington:—

"During the reading of reports and the business of the general session, he is always an attentive observer. From the first meeting, he has most always been on one or more of the important committees, and has made more reports than any other member. His official duties have not kept him from presenting valuable papers on a variety of subjects of professional interest. His contributions to this Association are so numerous that I will not attempt to give even the titles. The deep and intelligent interest he has always taken in its success, and the elevation of the profession, has been apparent to all its members, as well as to the professors of medical colleges, and to every reader of American medical literature. No member has ever had so clear a perception of the proper scope and real province of the Association as Dr. Davis. As a consequence, whenever perplexing questions have come up in the meetings, no one was so able to make plain the duty of the hour, and to suggest the best modes of disposing of them.

"He has been honored by election to almost every position within its gift, and twice chosen President. He is an exceedingly good debater, a close and logical reasoner, always self-possessed, animated in voice and magnetic in manner, with a degree of familiarity and accurate knowledge of the medical institutions of our country and the views of leading medical men that is not equaled, certainly not excelled, by any other physician who has attended the meetings. This gives him at once a decided advantage in directing debates on all questions affecting the purposes or powers of the Association. From the first meeting he has kept steadily in view the elevation of the standard of medical education, and has finally convinced the profession of our country and the faculties of the colleges, that their lecture terms ought to be increased and the classes graded."

Almost from the beginning of his medical career, Dr. Davis has been identified with medical education. He was the first to advocate a longer course of medical study, and a graded curriculum. Beginning his work as a medical teacher, with a Lectureship in the College of Physicians and Surgeons in New York City

in 1848, he removed one year later to Chicago to accept a chair in Rush Medical College, and ten years subsequently joined with others in the organization of the Chicago Medical College, the medical department of the Northwestern University. His purpose in the organization of the new college was to carry out his ideas of advanced medical education. Dr. Davis has now been for more than thirty years connected with this medical school, which was a pioneer in the cause of higher medical education in this country, and he is still dean of its faculty.

Dr. Davis has been constantly active in the service of the profession, in numerous other directions. While in New York, he filled the position of editor of the *Annalist*. After removing to Chicago, he took editorial charge of the *Chicago Medical Journal*, and later founded the *Chicago Medical Examiner*. He was instrumental in organizing the first medical society in Chicago, and also the first State medical society in Illinois.

Perhaps one of the most distinguished services performed by Dr. Davis for the medical profession, and one for which he has perhaps never received full credit, was the organization of the Ninth International Congress, for which he actually performed the chief work of both Secretary and President. Having been appointed Secretary General, he proceeded at once to elaborate a plan for the great gathering which should be sufficiently broad in its scope to include the great and varied mass of scientific matter which should come before it.

After months of arduous labor, including an enormous amount of foreign correspondence in arranging the program, and just as the last stroke of his pen had been given to this great task, he was suddenly stricken down with cerebral apoplexy, which left him with complete paralysis of the entire right half of his body, doubtless the result of the extreme physical and mental exertion required by this addition to the onerous duties in connection with his great private practice, his hospital work, his college lectures, and the heavy burdens connected with the editorship of the *Journal of the American Medical Association*, of which he was, for the first six years of its existence, the editor-in-chief. A man of less vigorous constitution and less mental and moral stamina, under similar circum-

stances, would have laid aside all professional duties, and would have considered himself amply excused from all social and professional obligations.

But one has only to glance at the portrait which forms our frontispiece to recognize the fact that Dr. Davis is not the man to yield to any obstacle not absolutely insurmountable, and we are hence not so much surprised to find him three weeks later resuming his official and other duties; and when he was a short time after elected President of the Congress to fill the place made vacant by the death of Dr. Austin Flint, he was able to transfer to his successor in the office of Secretary General a completely elaborated plan for the Congress, the admirably perfected details of which afterward contributed in a high degree to the marked success of this, the greatest gathering of medical men which ever convened on American soil.

Dr. Davis, although for many years having had upon his hands probably the largest medical practice in the West, has found time to endear himself to the hearts of his fellow-citizens by numerous acts of generosity and philanthropy which have been no small draft upon his purse as well as his time and energy.

In 1850 he gave a series of public lectures in the old State Street Market of Chicago, for the purpose of creating public interest in sanitation, especially in the introduction of a general system of sewerage, and an abundant water supply, and the raising of money for the establishment of a public hospital, there being no institution of this sort at that time in Chicago, then a city of only 27,000 inhabitants. A sufficient amount of money was raised to establish twelve beds, which constituted the beginning of Mercy Hospital, the oldest and now one of the most important hospitals in the city, having accommodation for more than 450 patients. For more than forty years, Dr. Davis gave continuous and almost daily attendance at this hospital, where he also gave clinical lectures to the students of the colleges with which he was connected.

Dr. Davis was also one of the founders of the Northwestern University, of the Chicago Academy of Sciences, the Chicago Historical Society, the Illinois State Microscopical Society, the Union College of Law, in which he is a Professor of Medical Jurisprudence, and of the Wash-

ingtonian Home for the Reformation of Inebriates. He was associated with Stephen Higginson, Charles Walker, and other prominent citizens in the organization of the first association for the systematic relief of the destitute.

Dr. Davis has all his life been a most active and busy man. He has worked far beyond the power of endurance of the average man. He has doubtless been enabled to do this by his simple, regular habits as regards eating and drinking, and an abstinence from the use of tobacco and alcoholic drinks in every form. As his physiognomy indicates, he is a man of keen and quick perceptions. In the practice of his profession, nothing escapes his observation. His inquiry into the causation of the maladies of his patient is most searching. His reasoning is always logical and convincing. His arguments are presented in so concise, direct, and impressive a manner, and with such earnestness, that the listener is impressed with the conscientiousness of his views, and is thereby impelled to the same way of thinking, by a sort of mental or moral contagion, as it were, perhaps fully as much as by the irresistible force of his logic. Although during his college course, Dr. Davis frequently delivered weekly as many as ten didactic and clinical lectures for months in succession, the subject matter of his address was always interesting, and he invariably commanded the attention and interest of his audiences.

Though his bearing is naturally grave and dignified, at the bedside of his patients and among his friends in social intercourse he is always genial and friendly. At the advanced age of 76 years he is still almost as active as ever in his profession, devoting many hours each day to consultation with his patients at his office or in company with his professional brethren at the bedside of their patients, writing articles for the medical press, contributing important papers to textbooks and encyclopedias, lecturing on special occasions before medical colleges and societies, and in many other active ways contributing to the welfare of his fellow-men.

It is certainly not too much to say that Dr. Davis furnishes an excellent type of the grand, and now somewhat old-fashioned, medical gentleman whose life has been, and still is, devoted to the relief and improvement of his fellow-men,

and furnishes an example worthy of imitation by the rising generation of medical men.

In physical development, Dr. Davis is a man of medium height, firm, well-built frame, no surplus tissue, and, as his portrait shows, strongly marked features. Mentally, he seems to possess a remarkably well organized brain and great capacity for mental activity. He has large intuitions, keen insight, and quick perceptions. He sees quickly and decides readily. He has all his life been an independent thinker, radical without being ultra, positive without being dogmatic, self-reliant but not egotistic. He has great force of character. Notwithstanding the fact that during almost his entire professional life he has with voice and pen and on every proper occasion defended the cause of total abstinence and opposed the medical use of alcohol as a stimulant, he has been able to maintain the confidence, the respect, and the good will of the medical profession of the United States, who have universally recognized his scientific ability, his dignity of character, and his conscientious devotion to the best interests of the profession and his fellow-men.

In conclusion, it is proper that the writer should state that permission to publish even this brief sketch of the life of this philanthropist and physician, was very reluctantly granted, and only after earnest and repeated solicitations on the part of the writer and others. The sketch has been prepared from material collected from various and authentic sources. Its publication in the first number of the *AMERICAN MEDICAL TEMPERANCE QUARTERLY* is considered appropriate in view of the fact that Dr. Davis, the "Father of the American Medical Association," the earliest and most earnest and active advocate of advanced education and medical progress in the United States, the organizer of the Ninth International Medical Congress, and a pioneer in almost every advance step made by the medical profession in the United States during the last century, is also the originator and "father" of the American Medical Temperance Association, of which this journal is the organ and exponent. We feel certain that those of our readers who are personally acquainted with Dr. Davis, and there must be very few of those who will see these lines who have

not met him somewhere at some time, will be glad to have in a concise form the leading features in the life of one who has so long adorned and so ably represented the noblest of all human pursuits and professions.

J. H. KELLOGG.

EXPERIMENTAL INQUIRIES RESPECTING THE PHYSIOLOGICAL EFFECTS OF ALCOHOL.*

BY J. H. KELLOGG, M. D.

PRELIMINARY NOTE.

THESE researches relate to five lines of inquiry, as follows:—

1. The influence of alcohol upon nerve sensibility, relating specially to the tactile sense and the temperature sense.
2. The influence of alcohol upon the rate of mental action.
3. Influence of alcohol in small doses upon muscular co-ordination.
4. The influence of alcohol upon muscular strength.
5. The effects of alcohol upon digestion.

None of the questions which this inquiry has been undertaken to solve, may be new, although as regards some of them I am not aware that researches have heretofore been undertaken for their solution. My purpose in undertaking the inquiry has been to obtain more exact data by the employment of methods of precision which have not heretofore been brought to bear upon the study of this question.

The first three lines of investigation, relating to the influence of alcohol upon sensibility, mental activity, and muscular co-ordination, have been carried on by means of an instrument known as a chronometer, a beautiful mechanism for the measurement of very small periods of time, designed by Verdin, of Paris. This instrument measures time in hundredths of a second, and is useful in a great variety of physiological investigations.

In the study of the influence of alcohol upon muscular strength, I have employed a mercurial dynamometer, in which an air-column in a closed graduated tube is used as the resistance. I spent some years in perfecting this instrument, and have now for several years employed it as a means of testing the strength of each group of muscles in the body, in connec-

* Paper read at the annual meeting of the American Medical Temperance Association held at Milwaukee, Wis., in May, 1893.

tion with the employment of muscular exercise as a therapeutic means in the treatment of various chronic disorders. From the results obtained in the examination of nearly 2000 persons by this instrument, I have constructed charts upon which the relative strength of each group of muscles in the body, when compared with each other group of muscles and with the muscles of an average man, may be graphically represented. The chart also affords an easy means of representing both the actual and the relative strength of arms, legs, trunk, or any other particular section of the body, compared with that of the whole.

The study of the effects of alcohol upon digestion has been made by means of an exact method originated nearly fifty years ago by Golding Bird, an eminent English physician connected with Guy's Hospital, London, and recently perfected by Hayem and Winter, two eminent French physiologists. This method consists in an exact determination of the amount and condition of the chlorine found in the gastric juice by means of quantitative analyses, together with other important data. To this method I have added the methods for determining the condition of the nitrogenous and farinaceous elements of food, as regards their advancement in the digestive process, which are furnished by modern physiological chemistry.

The results of these several lines of investigation may be briefly presented as follows :—

A healthy young man of eighteen years was carefully examined with reference to the length of time required for the perception of tactile sensation and the sensations of heat and cold. The average time for the recognition of tactile sensations was found to be .140 seconds; for the recognition of heat, .389 seconds; and for the recognition of cold, .323 seconds. The influence of alcohol upon the mental activity was tested by touching the instrument successively to different parts of the patient's body instead of to the same part, and noting the greater length of time which elapsed before the subject was able to make the signal. This method of examination prevents the patient from shortening the time by getting the basal ganglia in readiness for action with reference to a particular part of the body. The time required was found

to be .158 seconds, an increase of .018 seconds. The accommodation was tested by making the subject look at a small dot on a sheet of white paper, then close his eyes and place the end of his index finger upon the dot, or as nearly to it as possible. The average distance was found to be 8.1 millimeters. The total strength, adding together the results obtained in testing each group of muscles in the body—extensors as well as flexors—was found to be equivalent to lifting 4881 pounds. In the following table I have placed side by side the above results, and those obtained after the administration of two ounces of pure whisky :—

	Normal.	After Taking 2 oz. Whisky.
Tactile reaction,	.140 sec.	.303 sec.
Temperature reaction, (heat)	.389 "	.796 "
" " (cold)	.323 "	.750 "
Accommodation,	8.1 MM.	19.2 MM.
Strength,	4881 lbs.	
" (2 hours after)		3385 lbs.

The experiment was repeated in different persons and with essentially the same results in each one.

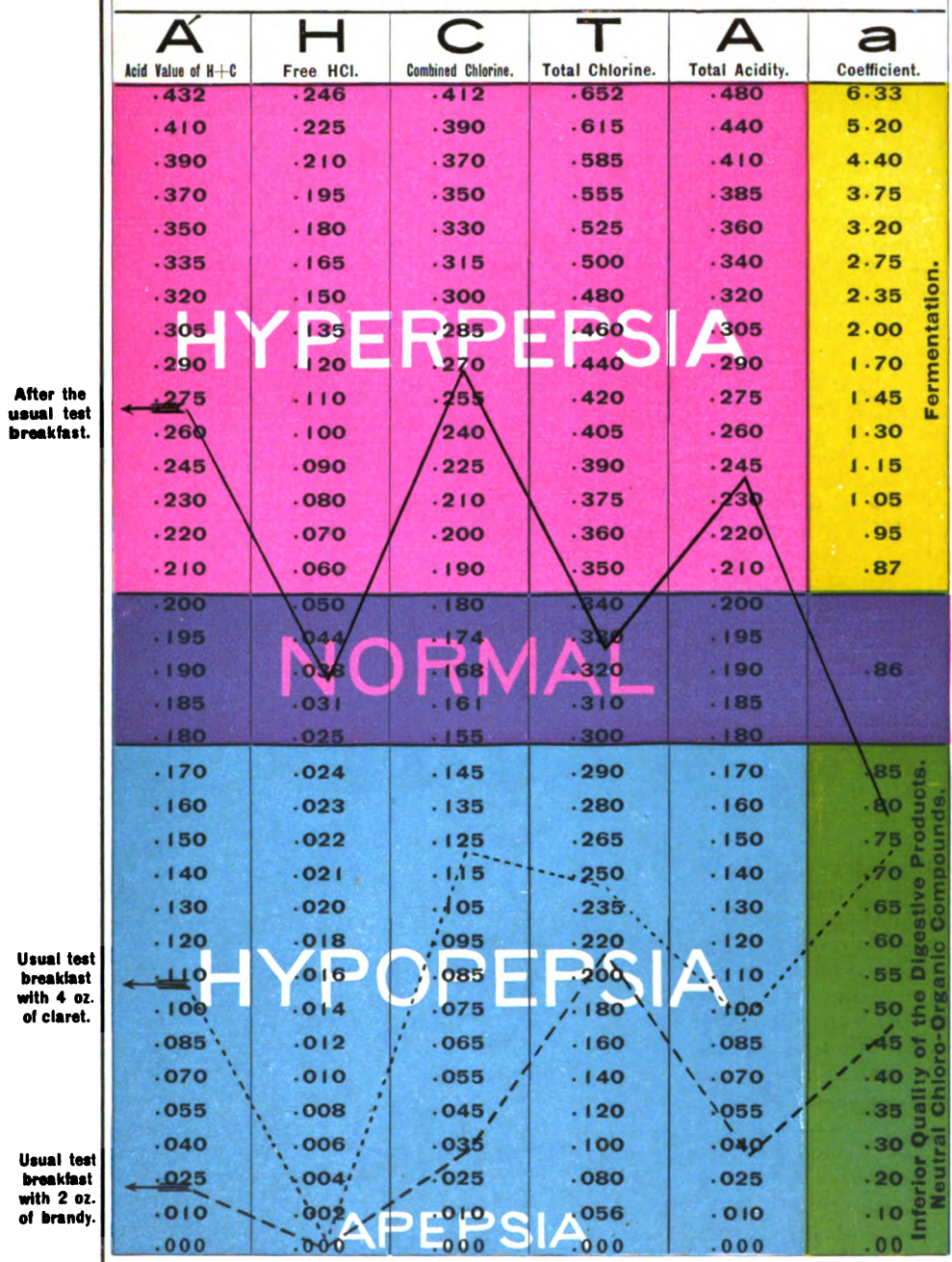
The accompanying representation of the condition of the motor system of a man before and after taking the brandy, shows very clearly the paralyzing effects of alcohol. Instead of acting as a stimulant, or increasing the muscular and nervous energy of the body, as it is generally supposed to be capable of doing, it actually diminishes both, and in a notable degree, as is clearly seen in the results of this experiment, which are graphically represented in the accompanying physical chart. It shows the actual strength to have been diminished nearly 1500 pounds, or about one third.

The following results were obtained in the experiments for determining the effect of alcohol upon digestion :—

The persons experimented upon were given a test breakfast consisting of 1½ oz. of dried, unfermented bread made from flour and water only, with the addition of 8 grains of salt and 8 ounces of water. Then one hour from the beginning of the meal, the contents of the stomach were evacuated by means of a stomach tube, carefully filtered, and the following facts noted :—

1. Total acidity.
2. Total chlorine.
3. The free HCl.
4. The combined chlorine.

Graphic Representation of the Condition of the Chemical Processes of Stomach Digestion, as determined by Exact Chemical Analysis of the Stomach Fluid Obtained after a Test Breakfast, BASED UPON THE STUDY OF 2000 STOMACH FLUIDS.



The figures in each of the above columns relate to a particular quantity or quality of stomach work. The last column relates exclusively to quality. The point at which the line starts indicates the class to which the case belongs, and the degree of severity of the case; the point at which the line ends indicates the quality of the work done, and the degree of fermentation or of deterioration in quality. The figures given represent the highest and the lowest quantities found in the quantitative analysis of more than 2000 different stomach fluids, made in the Laboratory of Hygiene of the Battle Creek (Mich.) Sanitarium.

J. H. KELLOGG, M. D., Supt.

(For explanation of method of investigation represented on this chart, see "Methods of Precision in the Investigation of Disorders of Digestion," by J. H. KELLOGG, M. D., Battle Creek, Mich.)

PHYSICAL CHART

Arranged from the results obtained in testing the strength of the individual groups of muscles in 600 MEN, by means of a Universal Mercator Dynamometer, made and consulted under the direction of J. H. KELLGROG, M. D., Superintendent of the Sanitarium and Hospital, Battle Creek, Michigan.

Except when otherwise indicated, Quantities are Expressed in Pounds Avoirdupois.

PER CENT.	HEIGHT (inches).	WEIGHT.	ARMS.										LEGS.										TRUNK.						RESPIRATION.				TOTAL STRENGTH.																							
			L. Head Flexors.	L. Head Extensors.	L. Forearm Pronators.	L. Forearm Supinators.	R. Arm Flexors.	R. Arm Extensors.	L. Deltoid.	R. Deltoid.	L. Pectoral.	R. Shoulder Retractor.	H. Foot Flexors.	R. Foot Flexors.	L. Foot Extensors.	R. Foot Extensors.	L. Thigh Flexors.	R. Thigh Flexors.	L. Thigh Extensors.	R. Thigh Abductors.	L. Thigh Adductors.	Trunk Posterior.	Trunk L. Lateral.	Trunk Anterior.	Neck Posterior.	Neck L. Lateral.	Neck Anterior.	Inspiration - Chest.	Expiration - Waist Expansion (in.).	Inspiration - (Chest Expansion (in.)).	Expiration - (Pneumometer & Sphygmograph).	ABMS.	LEGS.	TRUNK.	CHEST.	ENTIRE BODY.	PER CENT.																			
1	74.32	162.05	204	68	62	121	123	119	112	111	116	110	113	137	135	164	174	148	143	109	115	503	579	178	181	197	195	243	246	271	279	178	182	172	178	283	697	256	262	69	123	104	103	31	193	39	6.4	5.7	246	392	365	580	5	1		
2	72.7	185	180	175	56	55	109	98	102	100	96	94	97	100	101	151	140	123	125	96	98	412	414	144	143	182	174	206	214	230	237	163	163	174	178	225	575	202	205	60	103	91	90	279	300	5.0	5.1	208	856	200	53	188	155	684	739	2
3	72.2	179	170	167	53	52	97	94	99	96	94	90	92	93	94	142	139	117	119	93	94	399	401	138	137	170	167	199	204	223	230	158	158	47	44	213	547	194	191	56	87	87	82	268	288	4.7	4.9	196	544	191	05	62	147	561	706	3
4	71.6	176	162	159	49	48	90	87	95	92	86	85	90	133	130	108	111	91	91	383	385	131	129	159	157	189	194	213	221	151	151	139	138	99	515	183	181	52	92	82	82	252	274	4.4	4.7	182	329	177	429	18	138	651	609	5		
5	71.4	164	150	149	47	46	83	81	88	84	75	80	83	123	120	98	101	85	85	344	358	119	117	147	144	179	198	217	225	136	126	125	80	474	169	174	47	86	76	76	222	244	4.0	4.3	158	826	1637	2669	1282	47	5	6063	10			
6	70.5	156	142	140	48	47	79	76	82	80	72	74	77	78	116	113	93	94	81	81	293	338	112	110	137	135	163	167	181	185	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
7	69.9	144	126	120	43	42	73	70	76	74	66	67	70	69	71	75	111	108	88	89	78	78	182	183	165	159	176	177	181	185	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
8	69.5	147	130	123	42	41	72	69	75	73	65	67	70	69	71	75	111	108	88	89	78	78	182	183	165	159	176	177	181	185	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
9	69.1	144	126	120	43	42	73	70	76	74	66	67	70	69	71	75	111	108	88	89	78	78	182	183	165	159	176	177	181	185	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
10	68.3	138	118	114	38	37	68	65	71	69	61	63	66	65	67	71	105	102	85	86	71	71	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
11	68.0	134	110	107	37	36	67	64	70	68	60	62	65	64	66	70	103	100	84	85	70	70	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
12	67.4	131	107	103	36	35	66	63	69	67	59	61	64	63	65	69	101	98	83	84	69	69	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
13	67.0	129	103	99	35	34	65	62	68	66	58	60	63	62	64	68	99	96	82	83	68	68	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
14	66.7	127	100	97	34	33	64	61	67	65	57	59	62	61	63	67	97	94	81	82	67	67	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
15	66.4	125	98	94	33	32	63	60	66	64	56	58	61	60	62	66	95	92	80	81	66	66	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
16	66.1	122	93	91	32	31	62	59	65	63	55	57	60	59	61	65	93	90	79	80	65	65	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
17	65.8	119	90	87	31	30	61	58	64	62	54	56	59	58	60	64	91	88	77	78	64	64	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
18	65.5	116	87	84	30	29	60	57	63	61	53	55	58	57	59	63	89	86	75	76	63	63	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
19	65.2	113	84	81	29	28	59	56	62	60	52	54	57	56	58	62	87	84	73	74	62	62	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
20	64.9	110	81	78	28	27	58	55	61	59	51	53	56	55	57	61	85	82	71	72	61	61	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
21	64.6	107	78	75	27	26	57	54	60	58	50	52	55	54	56	60	83	80	69	70	60	60	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
22	64.3	104	75	72	26	25	56	53	59	57	49	51	54	53	55	59	81	78	67	68	59	59	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
23	64.0	101	72	69	25	24	55	52	58	56	48	50	53	52	54	58	79	76	65	66	58	58	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
24	63.7	98	69	66	24	23	54	51	57	55	47	49	52	51	53	57	77	74	63	64	57	57	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
25	63.4	95	66	63	23	22	53	50	56	54	46	48	51	50	52	56	75	72	61	62	56	56	187	187	167	167	171	171	171	171	129	131	117	116	94	438	159	163	43	82	71	71	206	223	3.7	4.0	148	311	1153	423	71	1191	433	567	15	
26	63.1	92	63	60	22	21	52	49	55	53	45	47	50	49																																										

5. The fixed chlorines.

6. The coefficient of stomach work.

Case I. — B——, a young man aged 19. The analysis of stomach fluid gave, with the usual test breakfast and without brandy, the figures shown in the following comparative table, which relate to the number of milligrams of chlorine expressed in HCl found in 100 c. c. of filtered stomach liquid :—

	Usual Test Breakfast.	Usual Test Breakfast with 4 oz. of Claret.	Usual Test Breakfast with 2 oz. of Brandy.
	grms.	grms.	grms.
Total acidity.....	.240	.086	.016
Total chlorine.....	.328	.236	.206
Free HCl.....	.032	.000	.000
Combined chlorine..	.268	.120	.034
Fixed chlorine.....	.098	.116	.172
Coefficient.....	.77	.72	.47

Peptones and propeptones were found to be notably diminished in proportion to syntonine in the stomach fluid containing brandy.

These experiments were repeated upon different persons and with alcohol in different forms, as gin, brandy, wine, etc., the quantities being made such that the same amount of alcohol, about 1 oz., should be taken in each case, and the results were found to be practically uniform and essentially the same as have been given above. The accompanying graphic representation shows very clearly the great diminution in the chemical activity of the stomach produced by alcohol. By a careful study of the diagram, it will be noticed that the young man who was the subject of the experiment, had a more than normally active digestion. There is no excess of free hydrochloric acid, but an unusually large amount of combined chlorine, indicating what might be considered a physiological hyperpepsia, since the quality of the work done was but slightly below the normal standard, as shown by the value of the coefficient *a*. Four ounces of claret caused the complete disappearance of the free HCl, diminished the combined chlorine more than fifty per cent, and also diminished the quality of the digestive work done. The test made with the two ounces of brandy shows almost a complete paralyzing of the stomach, or aepsia. The free HCl disappeared entirely, the combined chlorine, representing the useful stomach

work, was reduced to .034, or one eighth the amount done under normal conditions. This influence upon the digestion is exactly what would be expected of a drug like alcohol, that is a paralyzer of protoplasmic activity, an anæsthetic, and a sedative; and not a stimulant, as has been erroneously supposed. It should be added that each preparation of alcohol was diluted with water, so as to make exactly eight ounces of fluid in each case.

From the facts above given, it may be fairly concluded that the results of the administration of 1 oz. of alcohol internally are as follows :—

1. To diminish nerve activity.
2. To diminish cerebral activity.
3. To impair the co-ordinating power of the brain.
4. To lessen muscular strength.
5. To decrease digestive activity to a notable extent.

The only apparent exception which could be taken to the above conclusions, is in relation to the effect of alcohol upon muscular strength. The test taken 15 minutes after the administration of the alcohol showed a small increase, but a repetition of the test two hours later showed a diminution of more than 900 lbs., and ten hours later the patient's muscular strength was still 800 lbs. below his normal standard. The explanation of the apparent increase of strength immediately after taking the brandy is found in the remark made by the young man, that he felt more ready for work than he did before, and lifted with greater ease. He thought he could lift as much again, but the result of his effort fell far short of his expectations. This first effect was evidently due, not to any strength derived from the alcohol, but to the benumbing influence of alcohol upon the nerve centers, and the production of a state of mental exhilaration arising from the increased flow of blood to the brain. If any great strength would have been derived from the alcohol, it would have been more apparent two hours later, when sufficient time had elapsed for complete absorption and assimilation of the drug, rather than immediately after it had been swallowed. The notable diminution in strength which appeared within two hours after the alcohol was taken, and was still present at the end of ten hours, is most conclusive evidence that the drug possesses no value as a food,

and cannot be regarded as a source of muscular energy.

One curious result which I invariably noted in the studies of the effect of alcohol upon muscular strength, is the fact that the most notable diminution in strength is always to be observed in the lower extremities.

It will be observed that these results agree with those obtained by Reichert in experiments upon the heart of the frog, and by Parkes of England in experiments upon soldiers at work. It would seem that no further evidence could be required that alcohol is a narcotic and an anæsthetic, rather than a stimulant, and that its use as a supporting and tonic remedy, is a practice without foundation in either scientific theory or natural clinical experience.

I have made many more experiments relative to the effects of alcohol upon the various functions, including sphygmographic studies of the effect upon the heart and the blood pressure, the results of which I shall undertake to give, together with a more complete study of the facts mentioned in this note, in a fuller report which I hope to present in a future paper.

PROCEEDINGS OF THE AMERICAN MEDICAL TEMPERANCE ASSOCIATION.

THE third annual meeting of this Association was held at Club Hall, Pfister Hotel, Milwaukee, Wisconsin, June 8, 1893. The president, Dr. N. S. Davis, of Chicago, Ill., presided, and delivered the opening address, which may be found on page 1 of this journal.

Dr. T. D. Crothers, secretary of the Kellogg Prize Committee, made the following report:—

TO THE MEMBERS OF THE AMERICAN MEDICAL TEMPERANCE ASSOCIATION.

The Committee beg leave to report that eight essays have been received in competition for the two prizes offered by Dr. J. H. Kellogg, of Battle Creek, Mich. Three of these essays were designed to compete for both prizes in one paper, viz., the physiological action of alcohol, and the non-alcoholic treatment of disease, hence were not to be considered as complying with the purpose of the essays.

The remaining five essays were all more or less meritorious, and in some instances embodied much original work, but lacked in scientific accuracy and completeness of statement. The Committee were therefore unanimously of the opinion that no essay had fulfilled the requirements of the offer of Dr. Kellogg, and recommended that this offer remain open another year, up to May 1, 1894, on the same conditions; also that the prizes received be allowed to compete with others that shall be offered in the future. The Committee ask for power to enlarge their number to five persons, and respectfully urge each member of the Association to give all possible publicity to this effort to bring out the best opinions and the latest facts concerning alcohol.

Respectfully submitted,

N. S. DAVIS, *Chairman*.

T. D. CROTHERS, *Secretary*.

Dr. Webster moved that this report be accepted, and the chairman of the committee be given power to enlarge the committee as requested.—Carried.

The Secretary, Dr. T. D. Crothers, reported fourteen new members admitted during the past year, making the whole number one hundred and five members. It is a pleasure to note that the first branch society of the Medical Temperance Association was organized May 11, 1893, in Indiana, with Dr. H. J. Hall, of Franklin, as president. The same constitution and by-laws were adopted, and fifteen members were enrolled. Several medical men have expressed an interest to organize similar associations in the different State medical societies, and branch societies will doubtless be formed in the coming year.

The Treasurer, Dr. Webster, reported seven dollars and seventy-five cents in the treasury and no bills unpaid.

Dr. J. H. Kellogg, of Battle Creek, chairman of Committee on Statistics, made his report and read a paper entitled, "Experimental Inquiries Respecting the Physiological Effects of Alcohol."

Dr. I. N. Quimby moved a vote of thanks to Dr. Kellogg for his very entertaining scientific demonstration of the paralyzing action of alcohol.—Carried.

Dr. Webster remarked on the great changes of current opinion respecting alcohol. The meeting of the American Medical Association, now nearly closed, was noted for the frequent references to

the danger from the use of alcohol in the diseases where it has been very commonly used. He had heard at least eight or nine strong protests against its use, in different sections, by different physicians not noted as particular abstainers.

Dr. Quimby had observed a similar sentiment in the section on surgery and practice of medicine, and was rejoiced to see so rapid a growth among persons who not long ago used spirits very freely as a medicine.

Dr. C. H. Shepard then read a paper on "The Greater Temperance," after which Dr. Crother's paper was read.

The following preamble and resolutions were offered by Dr. Kellogg, and unanimously adopted :—

Whereas, Profound and wide-spread errors exist among the members of the medical profession respecting the physiological relations of alcohol and its supposed therapeutic value; and,—

Whereas, Modern physiological and pathological research afford abundant evidence of the erroneous character of the theories and assumptions upon which the medicinal use of alcohol has been based; and,—

Whereas, We believe the errors held by many members of the medical profession respecting the value of alcohol as a remedy in fevers and other wasting diseases, to be a cause of greatly increasing the gravity and fatality of these diseases, and a means of augmenting the evil of intemperance; therefore,—

Resolved, That it is the duty of this Association to employ all feasible means of enlightening the profession upon the important facts relating to this subject which have been brought to light by modern researches; and,—

Resolved, That in the furtherance of this object a committee consisting of the President and Secretary of this Association and one or more other persons to be selected by them, be and hereby is appointed to act as an Editorial and Publication Committee, and that said committee be hereby directed to begin, as soon as proper arrangements can be made therefor, the publication of a small monthly or quarterly journal, to be devoted to medical temperance reform, and to constitute the organ of this Association.

Resolved, That when the proposed journal shall be published, a copy shall be sent regularly to each member of this Association, and that each member of the Association shall, on the payment of his initiation or annual fee, thereby become a subscriber, or renew his subscription, as the case may be.

On motion of Dr. Didima, the old officers were re-elected by a ballot cast by the Secretary.

Dr. Quimby moved that the President and Secretary be a committee to arrange with Dr. J. H. Kellogg for the publication of a temperance quarterly journal as the special organ of the Association.—Carried.

Later, arrangements were made for the issuing of a journal, under the care of Dr. J. H. Kellogg, as editor in charge, and Drs. Davis and Crothers as associates on the editorial committee.

The Society then adjourned.

T. D. CROTHERS, *Secretary*.

AN HONEST ARGUMENT.

Most of the arguments offered in favor of the use of alcohol, either as a beverage or as a medicine, are based either upon ignorance of its physiological, or rather unphysiological, properties, or upon a desire and determination on the part of the defender of this drug to find an apology or a pretext for its use, no matter what the facts may be; and if the facts do not agree, then it is so much the worse for the facts. In the July number of the *London Westminster Review*, A. E. T. Longhurst, M. D., in an article entitled, "Scientific Aspects of the Temperance Question," very pithily says :—

"For a man to say that he takes alcohol because he likes it, regardless of the consequences to health which it entails, or the possibility of a drunkard's grave, is at any rate honest; but when he says he takes it as a food, because his doctor tells him it is so, and is a necessity, then he defies science and brings a reproach on the profession of scientific medicine."

The doctor further says, in concluding his article :—

"If we summarize the most recent scientific conclusions as to alcohol and its action on the human system, they will be somewhat as follows :—

"It is not found in nature, nor provided by her as a necessity of animal life.

"It predisposes to disease; deranges the constitution of the blood; unduly excites the heart and circulation; paralyzes the minute bloodvessels; impairs the function of the digestive organs; disturbs the regularity of nerve-actions; lowers the animal temperature; lessens muscular power; is not a food; the highest health and longevity are attainable without it.

"With so much evidence of the evils of alcohol, and such scientific expressions against its use in the animal economy, it is high time that the profession of medicine should speak about it from the scientific aspect of the question." J. H. K.

THE AMERICAN MEDICAL TEMPERANCE QUARTERLY

OFFICIAL ORGAN OF THE
AMERICAN MEDICAL TEMPERANCE ASSOCIATION.

N. S. DAVIS, M. D.,
T. D. CROTHERS, M. D., } Editors.
J. H. KELLOGG, M. D., }

OUR JOURNAL AND ITS OBJECTS.

IN issuing the first number of another medical journal, it is proper to state distinctly the purposes we have in view. These are as follows :—

1. To bring more prominently to the attention of the practitioners of medicine the actual influence of alcohol on the living human body as a whole, and upon each of its important parts, as demonstrated by all the more reliable methods of investigation known to modern science.

2. To point out with greater clearness the actual indications, if any, that alcohol is capable of fulfilling, either for the prevention or treatment of diseases, and thereby aid in freeing our text-books and medical literature from the abundant and ever-recurring inconsistent and contradictory statements that mar their pages and bewilder their readers.

3. To aid in disproving the illogical and pernicious doctrines that alcohol, opium, and other narcotics or anæsthetics are stimulant and tonic in small doses, but sedative and paralyzing in larger doses ; that retarded metabolic or molecular changes in tissues constitute indirect nutrition ; and that alcohol or any other substance can act as a conservator of tissue, a generator of vital force, a food, and yet by continued use cause degeneration of almost every tissue in the body, and by simply increasing the dose speedily destroy life.

To discuss properly these very important topics will require full knowledge of the physiological functions of each organ and structure in the body, their mutual relations to each other, and the action of external agents upon them. It will also

require adherence to the use of words and phrases of definite or exact meaning, and their use in such manner as to convey to the minds of others, ideas or facts capable of clear comprehension. It is probable that in no other department of science or literature, can so many words and phrases be found in common use without conveying any definite or uniform meaning. For instance, the common words stimulant, tonic, and restorative are used so variedly and interchangeably as nearly to destroy the distinctive meaning of each ; and who will define what is meant by *nature*, *efforts of nature*, *conserving of tissue*, generating of vital forces, *vis medicatrix naturæ* ? What is nature ? What is vital force ? how and where is it generated ?

If alcohol disappears in the living body by oxidation, at what place does the oxidation occur ? and what are the resulting products ? Will the exact analytical and other processes of modern science tell us ? If alcohol is in any proper sense a food, either direct or indirect, why does its daily use develop results so different from those resulting from all other kinds of known food ? We eat bread, meat, vegetables, etc., daily, for threescore years, and are satisfied with the same quantities at the end as at the beginning. Is it so with alcohol ? Is there any other article recognized as food that by daily use leads to perversions of function and degenerations of structure, in almost every organ of the body ? If alcohol is a *tonic*, either cardiac or general, why does its daily use in any appreciable quantity render the individual more liable to attacks of all epidemic and endemic diseases, and more liable to die when attacked, or when subjected to injuries or surgical operations ? And why is its use rigidly prohibited whenever man is put in training for developing the greatest physical power and endurance ?

All these are questions of momentous importance to the human race. And on

the members of the medical profession rests the responsibility of giving them absolutely correct answers. The methods and appliances of modern science have furnished the means for doing so. Will they use those means, and cease to talk longer about the *temperate* use and *abuse* of a poison, without giving a plain line or mark separating the two? N. S. D.

When and Where.—It was a cold, cloudy morning on the 7th of May, 1891, when a small number of physicians and middle-aged women gathered in an upper room of the Grand Army of the Republic Hall at Washington, D. C., at the early hour of 9 A. M., to organize the American Medical Temperance Association.

Some brief, earnest remarks by Dr. Davis and others were made, and the meeting dissolved, to assemble again next morning.

A brief paragraph mention in that day's papers brought out a larger audience next morning, in a hall below in the same building. Remarks from a dozen or more persons in the same earnest strain, on the need of more accurate facts and clearer conceptions concerning the nature and value of alcohol, followed by a few resolutions, the signing of a paper, and an earnest appeal by Dr. Davis to carry the subject into the realms of science, and the American Medical Temperance Association was organized. A few paragraphs in the daily papers, and some warm comments in the temperance journals, and brief notices in the medical press, and this event passed into history.

While we are too near to judge of the real significance of this event, there are many reasons for believing that this Association is destined to occupy a very important place in the coming century. The alcoholic problem touches every phase of civilization, and has an intensely personal influence in medicine, sociology,

and every relation of life. This infant Association, born in comparative obscurity, at the close of the century, has all the promise of a giant growth and great power in the scientific fields of preventive medicine. The field is practically boundless, and unoccupied, and this Association has only to follow up the leads of science, and mark out the paths for the great army of workers that are to follow.

T. D. C.

TWO PARAGRAPHS SUGGESTING A POSSIBLE CONNECTION.

THE Gross Medical College *Bulletin*, Denver, Col., in giving an account of the meetings of the American Medical Association at Milwaukee, says: "Perhaps one of the pleasantest evenings of the season was spent at Schlitz Park, a beautiful summer resort, at which a delightful concert both within doors and without was given in compliment to the visiting doctors. The C—— *Delegates* can testify to the excellent quality of the *amber fluid* so abundant in Milwaukee and so liberally served at *this* entertainment." In another column of the same *Bulletin* is the following: "Lost.—We will pay a liberal reward for any information leading to the return of a railway pass. It was probably lost either at Pabst's Palace or at *Schlitz Park*, Milwaukee, Wisconsin." Address either of the C—— *Delegates* at D——.

N. S. D.

NOT SENTIMENT, BUT SCIENCE.

A MEDICAL friend said to the writer recently, "Doctor, I can't understand why scientific men like Dr. N. S. Davis and others associated with him in the American Medical Temperance Association, can step aside from their accustomed habits of thought and their usual methods of dealing with scientific questions, to enter upon the discussion of a question which,

like this temperance question, is only a matter of sentiment."

You are quite mistaken, my friend, we replied, in thinking that there has been any such departure from the path of scientific rectitude as you suppose, by either Dr. Davis or his colleagues. While it is doubtless true that both Dr. Davis and his associates are actuated by an interest to promote the cause of temperance in their efforts to encourage the discussion of this question among physicians, they do not propose to enter upon the consideration or discussion of the sentimental, religious, social, or political aspects of the temperance question, but to deal with this question purely as a scientific problem.

The question of the utility or non-utility of alcohol as a therapeutic agent is one of the questions which it is proposed to study. Recent studies of this question by eminent authorities in physiological research, such as Wood and Hare, of our own country, and others equally eminent in other countries, have shown most conclusively that the common practices of the medical profession in the medicinal use of alcohol are utterly at variance with the indications of its physiological effects. The profession at large seem not to be aware of this fact, although the evidence has been widely published in medical journals, annuals, reprints, and text-books.

It is nothing but the old rut of habit that keeps us in line with the practice of our medical forefathers in prescribing alcohol for conditions which require an increase in vital activity instead of placing the drug where it belongs, in the category of agents which produce narcotic and anæsthetic effects. The tissue-changes resulting from the habitual use of alcohol in large quantities; the functional disturbances arising from its more moderate use; the subtle, disturbing influences which grow out of the habitual use of the so-called "light wines" and malted

drinks,—these are important questions which need to be studied from a scientific standpoint. Much harm has perhaps been done, and much prejudice created in the minds of the medical profession, by the highly colored and often overdrawn and exaggerated accounts of the effects of alcohol upon the human body which have sometimes appeared in non-professional books and periodicals dealing with the temperance question. Writers with the best of intentions have sometimes injured their argument in favor of total abstinence by exaggerating the evils of moderate indulgence, or by inaccurate statements respecting the mischief arising from the free use of alcoholic drinks.

One of the purposes of this journal, and of the Association of which it is the organ, is to tell the exact truth so far as is known, and the whole truth, carefully abstaining from telling anything but the truth, in relation to this question, which, it will be admitted, has grown to be one of the most serious of all the social and hygienic problems with which the modern civilized world has to grapple. No medical man of large experience can fail to recognize the importance of this question from a sanitary and hygienic aspect.

It is these scientific phases of the alcoholic question, and no others, which are to receive attention in the columns of this journal; and it is believed that, through this medium, many facts which are perhaps not wholly familiar to the busy practitioner to whom this question is, of all others, of the greatest practical importance, may be drawn from the storehouse of modern medical knowledge. This, at least, will be the aim of the editors to accomplish, and in all the discussions of this question which may appear in this journal, the editors will seek to preserve a true scientific spirit, and to exclude whatever is not in harmony with logical consistency, true scientific method, and dignified courtesy. J. H. K.

IS IT CONSISTENT ?

DR. ALFRED L. LOOMIS, in an article on heart-failure, in the *International Medical Magazine* for February, 1893, says : "An alcoholic heart, for instance, loses its contractile and resisting power, both through morbid changes in its nerve-ganglia and in its muscle-fibers. In typhoid fever, muscle-changes are evidently the cause of the heart-enfeeblement ; while in diphtheria, disturbances in innervation cause the heart-insufficiency." If the habitual use of alcohol causes the loss of contractile and resisting power by impairment of both the nerve-ganglia and muscle-fibers of the heart, how can it act as a "heart- tonic" ? And why administer it as a remedy in typhoid fever where the muscle-changes are already enfeebling the heart, or in diphtheria when the impaired innervation is threatening both respiratory and cardiac paralysis ? Yet the same writer on the same page of his article says : "A rule which for a long time has governed me in all *toxic* conditions is, not to wait for signs of commencing heart-failure, but to begin the administration of *alcohol*, strychnine, and other heart-tonics early, and thus, if possible, save my patients from fatal heart-failure." But if in typhoid fever, for instance, we begin early and give alcohol continuously through the three or six weeks of the disease, are we not seriously in danger of giving our patient not only an "alcoholic heart," but alcoholic kidneys as well ? And why give alcohol and strychnine to the same patient at the same time, when most reliable therapeutic investigations have shown them to be physiologically antagonistic, the former directly diminishing the respiratory and vaso-motor nerve functions, and the latter as directly increasing both ? N. S. D.

Dr. Ernest Hart on Alcohol in Cholera.—At the recent meeting of the American Medical Association in Milwau-

kee, Dr. Ernest Hart, the eminent editor of the *British Medical Journal*, presented one of the ablest and most interesting papers on the subject of cholera which has appeared in many years. In the course of his remarks relative to the therapeutics of this disease, Dr. Hart referred to alcohol in anything but complimentary terms. It seems to us that the argument made by the doctor,—that the introduction of such a substance as alcohol, itself being the product of germ action, into a system already suffering from the toxic influence of a ptomaine, could not be otherwise than pernicious,—is an unanswerable one. Indeed, nothing could be more absurd. Such an action is like adding fuel to a flame, when water or some other extinguishing agent is the thing needed. Experience also agrees entirely with Dr. Hart's view. Medical men who watched the cholera epidemic at Tunis some years ago, remarked that "drunkards died off like flies." In the light of modern knowledge, probably no intelligent physician would think of administering alcohol in cholera. The reason given by Dr. Hart is, at any rate, conclusive enough to condemn such a practice. No one can dispute the soundness of the argument. What apology, then, can be offered for the use of alcohol in such diseases as typhoid fever, pneumonia, erysipelas, tuberculosis, and other acute and chronic maladies in which, as in cholera, the system is struggling under the influence of a ptomaine which is the direct cause of the most serious symptoms of these disorders ? In other words, if the use of alcohol in cholera is dangerous for the reason that this drug is the product of germ action, practically although not technically a ptomaine, and that the system of the person suffering from cholera is already making a life-and-death struggle to expel a ptomaine, the toxic product of the cholera germ, and hence can only be hindered by the introduction of similar products into the system, is it not appar-

ent that the same principle applies to every similar case, and hence, that alcohol can be of no use in any disease in which the human system is laboring under the influence of a poisonous substance which has been generated within the body, or introduced from without?

There is much food for thought in Dr. Hart's argument, and we trust it may be given the consideration which its cogency and the high authority from which it comes, entitle it to receive. J. H. K.

NEW INTOXICANTS.

THE alcohol habit, which has become so prevalent in civilized countries, and which has blighted almost every nation of savage or primitive people that has been brought in contact with civilization, is by no means the only poison habit against which the medical profession should earnestly raise its voice. New forms of intoxication are constantly arising. Every new drug capable of producing an artificial felicity is quickly seized upon and made the means of a new poison habit. This is not the effect of a natural and physiological craving in the human constitution, but of an unnatural and artificial appetite which is, in large part, the result of the artificial conditions of life which prevail among civilized people. Through habit and heredity, the use of one nerve-tickling or obtunding drug creates a demand for another, and so the evil grows. A recent number of the *Medico*, a French periodical, gives an account of a new form of intoxication which is becoming fashionable among the ladies of Paris. This new mode of dissipation consists in the inhalation of the fumes of naphtha. The intoxication produced by this drug is similar to that induced by ether drinking, as it appears in Ireland and Russia. Its effects, however, continue for a much longer period, and are said to be very much more injurious. The French authority asserts that Parisian

ladies are not responsible, however, for the invention of this new mode of intoxication, but that it was introduced into Paris by American ladies (?) who had long practiced it at their homes in America.

America must be held responsible for the invention of several new modes of intoxication. Ether intoxication was practiced in the South long before the drug was used as an anæsthetic in surgery. The writer once received from an eye-witness a very graphic account of an ether party held half a century ago in a country neighborhood in the South, at which a negro was first exhilarated to wild delirium, and afterward rendered unconscious by the prolonged administration of ether, to the great dismay of the reckless young people who had been amusing themselves at the expense of the poor negro. Intoxication by the chewing of tea seems to have originated in Boston, where a couple of servant girls were arrested a few years ago for being drunk and disorderly. The investigation by the court showed that they had become tipsy on tea. Tea cigarettes were, however, the ingenious invention of a Parisian woman who had tired of all the ordinary forms of intoxication.

The morphia habit, the cocaine habit, the chloral habit, and other poison habits which are prevalent in this and other countries, are only different manifestations of a wide-spread and apparently increasing love for drugs which benumb or excite the nerves, which seems to characterize our modern civilization. Indeed, there appears to be, at the present time, almost a mania for the discovery of some new nerve-tickle, or some novel means of fuddling the senses. It is indeed high time that the medical profession raised, with one accord, its voice in solemn protest against the use of all nerve-obtunding and felicity-producing drugs, which are all, without exception, toxic agents, working mischief and only mischief in the human body. J. H. K.

REVIEWS.

TEMPERANCE IN ALL NATIONS.—Edited by J. N. Stearns, New York. The National Temperance Society Publishing House, 58 Reade St.

The title page states this work to be a history of the cause of temperance in all countries of the globe, together with the papers, essays, addresses, and discussions of the World's Temperance Congress held in Chicago, Ill., in June, 1893. The work is published in two volumes of about 600 pages each. The first volume is already out. The second volume is in press, and will be completed within a few days of the present writing.

In the projection and preparation of this work, the editor, Mr. Stearns, has well maintained the reputation for good judgment, business energy, and fidelity to the cause of temperance which he has earned by many years of earnest devotion to the interests of the National Temperance Society Publication House, of which he has been really the center and life.

The first volume is devoted chiefly to a history of efforts in the direction of temperance reform which have been made in the different civilized countries. Some forty different countries are represented in this historical resumé. More than forty chapters are devoted to the individual history of temperance societies and special movements. An exceedingly valuable feature of the work, is a series of tables giving the *per capita* of consumption of liquors in the principal countries of the world, with statistics of the manufacture of distilled spirits, etc., and their consumption in the United States during each year, from 1875 to 1892, and other important data. The volume concludes with something more than 100 pages devoted to reports from American consuls, nearly forty in number, giving the facts in relation to the laws regulating the sale of liquor in an equal number of the different countries of the globe. These reports contain a vast amount of exceedingly valuable collateral matter bearing upon the subject of temperance, such as the statistics of vice and crime in various countries, the social and

moral condition of the people, etc. The second volume will consist chiefly of the addresses delivered at the Congress.

This great work is perhaps the most extensive enterprise of the sort ever undertaken in the interest of temperance. The publishers have invested many thousands of dollars in the production of the work, and have produced an encyclopedia of information, the value of which cannot easily be estimated. Every person interested in temperance reform, and every student of sociology, needs this work for his library. It must be, for many years to come, a standard work of reference. Circulars and full information concerning the sale of the work may be obtained by addressing the publishers.

THE MEDICAL PIONEER.—This journal, a sixteen-page monthly, is the official organ of the British Medical Temperance Association. It has not yet quite completed its first year, but if one may judge from the make-up of the journal and its general appearance, it must be pronounced a decided success. The British Medical Temperance Association, under the leadership of such able men as Dr. B. W. Richardson, Dr. Morton, Dr. Rich, and others, has for many years been doing a noble work in the propagation of temperance principles among the profession of England. Every number of the journal is replete with potent facts and cogent arguments in favor of total abstinence, and with the elucidation of scientific truths respecting alcohol, which have been developed by modern physiological research. Each number contains the portrait of some able champion of the cause of medical temperance. The last number contains, among other interesting papers, a sketch with the portrait of Dr. Nathan Smith Davis, President of the American Medical Temperance Association; an abstract of a lecture by Dr. Norman Kerr on "Criminal Responsibility and Inebriety;" and an interesting paper on "The Sanitary Science of the Drink Problem," which contains much food for thought in relation to the cause of inebriety. We shall find frequent occasion to mention the *Medical Pioneer* in future numbers of this journal.

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THE object of the Association is to study and investigate the action of alcohol as both a beverage and a medicine. The only qualifications for membership required are, to be a regular medical practitioner and a total abstainer from alcohol as a beverage. It will be apparent that the last qualification is more or less a scientific necessity for good work in this field. It is assumed, rightly, that all physicians interested in this problem of alcohol should approach it from the scientific side alone, unbiased by any personal considerations of custom or habit, and with no object other than to ascertain the facts concerning this question, irrespective of all possible conclusions. This is the spirit and purpose of the Association.

The alcoholic problem has reached such proportions, and has become a subject of such intense interest in all political, social, and religious circles, as to demand scientific study.

Medical men in every community are called upon to give information concerning the facts relating to alcohol; and the necessity for medical study and agreement concerning the general truths are apparent to every one. For this purpose the Medical Temperance Association invites the co-operation and aid of every physician, not for the propagation of any theory, but for the gathering and grouping of facts concerning the action of alcohol.

The Association is entirely independent of

IT is the intention of the publishers to reproduce with each number, as a frontispiece, the portrait of some able scientist or physician who has made some valuable contribution to the scientific study of alcohol or to the advancement of the cause of total abstinence. Each portrait will be accompanied by a brief biographical sketch. In placing the portrait of Dr. N. S. Davis at the head of the list, the publishers and Dr. Davis's associates on the editorial committee were obliged to overrule the doctor's demurrer, feeling that nothing could be more appropriate than that the first number of this journal should contain the portrait of the man who has done more than any other American for the advancement of scientific temperance and the discovery of the truth about alcohol.

THE editors have in hand a number of very valuable papers read at the late meeting of the American Medical Temperance Association, which will appear in future numbers of the journal.

any other object, except the purely scientific question of alcohol.

The liberty of members in prescribing alcohol as a medicine is entirely unrestricted.

All persons desiring to become members may do so by signing the following form of application, and sending it to the secretary, Dr. T. D. Crothers, of Hartford, Conn., with a membership fee of one dollar:—

Being an abstainer from all intoxicating liquors as beverages, I desire to become a member of the American Medical Temperance Association, and am willing to comply with the requirements of its By-Laws.

Name

Address

Date

PRIZE ESSAYS ON THE ACTION OF ALCOHOL AND ITS VALUE IN DISEASE.—The American Medical Temperance Association, through the kindness of J. H. Kellogg, M. D., of Battle Creek, Mich., has decided to extend the offer of the following prizes for the year 1894:—

1st. One hundred dollars for the best essay on "*The Physiological Action of Alcohol, based on Original Research and Experiment.*"

2d. One hundred dollars for the best essay on "*The Non-Alcoholic Treatment of Disease.*"

These essays must be sent to the Secretary of the Committee, Dr. T. D. Crothers, Hartford, Conn., on or before April 1, 1894. They should be in typewriting, with the author's name in a sealed envelope, with motto to distinguish it. The report of the committee will be announced at the annual meeting at San Francisco, Cal., May 1, 1894, and the successful essays read.

All the essays will be the property of the Association, and will be published at the discretion of the committee. All essays are to be purely scientific, and without restrictions as to length. The competition for these prizes is not limited to physicians of this country.

Address all inquiries to T. D. Crothers, M. D. (Secretary of Committee), Hartford, Conn.

THE Temperance Congress at the Memorial Art Building, Chicago, was a decided success. The able and interesting addresses which were delivered at this congress will be printed in the second volume of a compendious work, published by the National Temperance Publication Society, 58 Reade St., New York City, under the management of J. N. Stearns, who has probably done more than any other man in the propagation of temperance principles through the publication of works of permanent value.

A COPY of this issue will be sent to each member of the American Medical Temperance Association, and to several thousand physicians in different parts of the United States and Canada. It is hoped that a considerable number of those who receive the journal will find its purpose and its contents of sufficient interest to lead them to become subscribers by sending to the publishers the small sum of fifty cents. All remittances and other communications, whether intended for the publishers or the editors, should be addressed to the AMERICAN MEDICAL TEMPERANCE QUARTERLY, Battle Creek, Mich.



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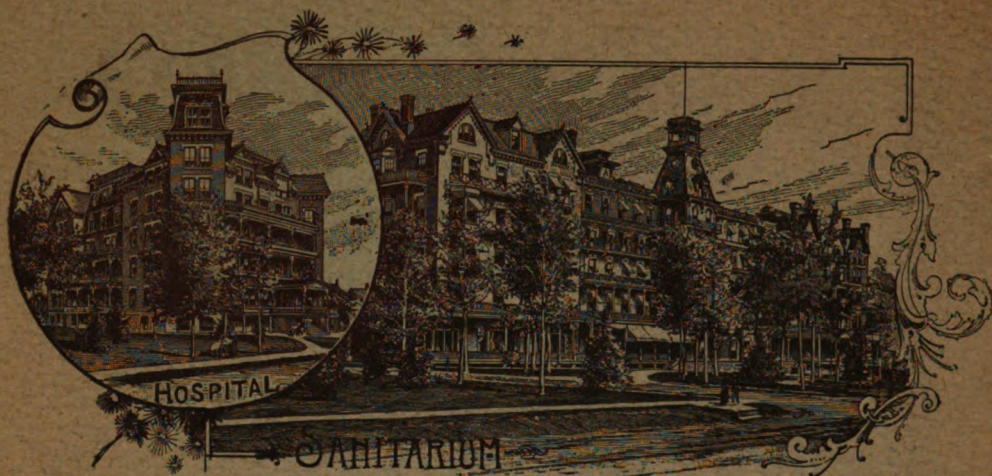
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